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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,401	02/06/2002	Sewim F. Ablay	CM04288H	9611
22917	7590	04/24/2006	EXAMINER	
MOTOROLA, INC. 1303 EAST ALGONQUIN ROAD IL01/3RD SCHAUMBURG, IL 60196			HOFFMAN, BRANDON S	
			ART UNIT	PAPER NUMBER
			2136	

DATE MAILED: 04/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/068,401

Applicant(s)

ABLAY ET AL.

Examiner

Brandon S. Hoffman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Claims 1-3 and 5-46 are pending in this office action.
2. Applicant's arguments, filed April 4, 2006, have been considered and are persuasive. However, a new ground of rejection has been made

### *Claims Rejections*

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Claim Rejections - 35 USC § 103*

4. Claims 1-3, 5-7, 10-15, 17-22, 25-35, 37-43, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga et al. (U.S. Patent No. 6,577,934) in view of Adams (U.S. Patent No. 6,718,470).

Regarding claims 1, 17, and 27-29, Matsunaga et al. teaches a method/apparatus for authenticating an entity in a vehicle, the method/apparatus comprising:

- A first, trusted entity residing in the vehicle (fig. 1, ref. num 13);
- A second entity residing in the vehicle and in communication with the trusted entity (fig. 1, ref. num 10, 11, or 12); and

- Wherein the trusted entity receives a service request, and grants the service request (col. 11, lines 50-61);
- Wherein the trusted entity is a vehicle gateway (col. 5, lines 1-5), and
- Wherein the second entity is one of a wireless gateway, a vehicle system, and a user system (col. 4, line 31 through col. 5, line 16).

Matsunaga et al. does not teach authentication takes place with two internal (to the vehicle) devices, but rather authentication takes place with an internal gateway and an external network (col. 12, line 1 through col. 13, line 5).

Adams teaches determining whether the second entity is an authenticated entity, and, when the second entity is not an authenticated entity, authenticating the second entity to produce an authenticated entity (col. 1, line 62 through col. 2, line 2).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine authenticating first and second devices, both residing in the vehicle, as taught by Adams, with the method/apparatus of Matsunaga et al. It would have been obvious for such modifications because it is important to ensure that the correct device plugs into the correct bus connector or else safety issues and problems with compatibility will arise (see col. 5, line 56 through col. 6, line 19 of Matsunaga et al.). Also, placing both entities in the vehicle, as opposed to the authentication entity being external, prevents problems of network connectivity. For

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example, if a vehicle enters a tunnel, or there is bad weather, an external authentication device would be useless. However, since the authentication device is internal to the vehicle, authentication may take place under any circumstances.

Regarding claims 2, 18, and 30, Matsunaga et al. as modified by Adams teaches wherein the trusted entity stores a list of authenticated entities and determines whether the second entity is an authenticated entity by reference to the list (see col. 2, lines 3-8 of Adams).

Regarding claims 3, 19, and 31, Matsunaga et al. as modified by Adams teaches wherein the trusted entity stores a list of authenticated entities and adds the second entity to the list when the trusted entity authenticates the second entity (see col. 2, lines 3-8 of Adams).

Regarding claims 5, 20, and 32, Matsunaga et al. as modified by Adams teaches, wherein the step of authenticating the entity comprises steps of requesting, from the entity, a certificate comprising a vehicle manufacturer signature, receiving a message comprising the requested certificate, and determining whether the entity is an authenticated entity based on the received message (see fig. 4 and col. 1, lines 36-50 of Adams).

Regarding claims 6, 21, and 37, Matsunaga et al. as modified by Adams teaches wherein the message comprising the requested certificate further comprises an entity signature and an entity manufacturer signature (see col. 1, lines 36-50 of Adams, there are at least two certificate types listed, each certificate type would have at least signature).

Regarding claims 7, 22, 33, and 34, Matsunaga et al. as modified by Adams teaches wherein the step of authenticating the entity further comprises steps of verifying at least one of the vehicle manufacturer signature, the entity signature, and the entity manufacturer signature, and wherein the step of determining whether the entity is an authenticated entity comprises a step of determining whether the entity is an authenticated entity based on the verification of at least one of the vehicle manufacturer signature, the entity signature, and the entity manufacturer signature (see col. 1, lines 36-50 of Adams).

Regarding claim 10, Matsunaga et al. as modified by Adams teaches further comprising a step of determining whether to reprogram the entity when the second entity is an authenticated entity (see col. 4, lines 35-44 of Matsunaga et al.).

Regarding claims 11 and 40, Matsunaga et al. as modified by Adams teaches wherein the step of determining whether to reprogram the entity comprises steps of retrieving vehicle system status information from the entity, and determining whether to

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reprogram the entity based on the retrieved vehicle system status information (see fig. 1, ref. num 10, 11, or 12 and col. 4, lines 35-44 of Matsunaga et al.).

Regarding claims 12 and 41, Matsunaga et al. as modified by Adams teaches further comprising steps of in response to a determination to reprogram the entity, reprogramming the entity with new software, when the entity is reprogrammed, executing the new software by the entity to produce a result, conveying the result to the trusted entity, and determining whether the reprogramming is successful based on the result (see col. 4, lines 35-44 of Matsunaga et al.).

Regarding claims 13, 14, 26, and 42, Matsunaga et al. as modified by Adams teaches wherein the entity is a vehicle system that comprises vehicle system status information and wherein the method further comprises steps of retrieving vehicle system status information from the entity, transmitting the retrieved vehicle system status information, and receiving new software in response to the transmission of vehicle system status information (see fig. 1, ref. num 10, 11, or 12 and col. 4, lines 35-44 of Matsunaga et al.).

Regarding claims 15 and 43, Matsunaga et al. as modified by Adams teaches wherein the vehicle status information comprises at least one of a current date, a current time, a current location of the vehicle, a current mileage of the vehicle, a vehicle

identification number, and an engine diagnostic code (see fig. 1, ref. num 1 and 4 of Matsunaga et al.).

Regarding claims 25 and 35, Matsunaga et al. as modified by Adams teaches further comprising a step of, when the entity is an authenticated entity, granting the request for service (see col. 11, lines 50-61 of Matsunaga et al.).

Regarding claim 38, Matsunaga et al. as modified by Adams teaches wherein when the second entity is an authenticated entity, the trusted entity determines whether to reprogram the entity and, in response to a determination to reprogram the entity, reprograms the second entity with new software (see col. 4, lines 35-44 of Matsunaga et al.).

Regarding claim 39, Matsunaga et al. as modified by Adams teaches wherein the second entity is a vehicle system that comprises vehicle system information and wherein the trusted entity retrieves vehicle system status information from the vehicle system and determines whether to reprogram the entity based on the vehicle system information (see fig. 1, ref. num 10, 11, or 12 and col. 4, lines 35-44 of Matsunaga et al.).



Regarding claim 45, Matsunaga et al. as modified by Adams teaches wherein a vehicle gateway performs the steps of receiving, determining, authenticating, and granting (see fig. 1, ref. num 13, 14, and 15 of Matsunaga et al.).

Regarding claim 46, Matsunaga et al. as modified by Adams teaches further comprising the steps of when the entity is an authenticated entity, receiving service requests from the authenticated entity (see col. 11, lines 50-61 of Matsunaga et al.).

Claims 8, 9, 16, 23, 24, 36, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga et al. (USPN '934) and Adams (USPN '470), and further in view of Menezes et al. ("Handbook of Applied Cryptography," CRC Press LLC, 1997, pps. 397-405 & 493-495).

Regarding claims 8, 23, and 36, Matsunaga et al./Adams teaches all the limitations of claims 1, 17, and 27, respectively, above. However, Matsunaga et al./Adams does not teach authenticating by generating a random number and using a challenge-response protocol.

Menezes et al. teaches wherein the step of authenticating the entity comprises steps of generating a first random number, conveying, to the entity, the first random number and a request that the entity send a certificate comprising a vehicle manufacturer signature, receiving a message comprising the certificate having a vehicle

manufacturer signature and further comprising an entity signature, and entity manufacturer signature, the first random number, and a second random number, and wherein the step of determining whether the entity is an authenticated entity comprises a step of determining whether the entity is an authenticated entity based on the verification of at least one of the vehicle manufacturer signature, the entity signature, and the entity manufacturer signature (page 404, section (i)).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine authenticating an entity by a challenge-response protocol, as taught by Menezes, with the method/apparatus of Matsunaga et al./Adams. It would have been obvious for such modifications because the challenge-response protocol allows an entity to be authenticated, that is, prove they are who they say they are, without disclosing the actual secret that is being proved (see page 397, section 10.3 of Menezes et al.).

Regarding claims 9, 16, 24, and 44, Matsunaga et al./Adams teaches all the limitations of claims 1, 17, and 27, respectively, above. However, Matsunaga et al./Adams does not teach the use of session keys.

Menezes et al. teaches further comprising steps of when the entity is an authenticated entity, generating a session key, and securely conveying the session key to the authenticated entity (page 494, Motivation for use of session keys).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine generating a session key, as taught by Menezes, with the method/apparatus of Matsunaga et al./Adams. It would have been obvious for such modifications because session keys are good in cases where only a short duration of the key use is needed, such as that of updating/reprogramming a programmable key (see page 494 of Menezes et al.).

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. MP3car.com (Wayback Machine for mp3car.com, published December 1998, accessed on April 14, 2006.) discloses placing a computing device into a vehicle, which suggests the motivation of placing devices, which can be authenticated, into a vehicle (a laptop or other computing device).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon S. Hoffman whose telephone number is 571-272-3863. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Branda R/p*

BH

CHRISTOPHER REVAK  
PRIMARY EXAMINER

*CEL 4/20/06*